

**Abstract**

X-ray tubes (11/12) for high dose rates, a corresponding method for generating high dose rates with X-ray tubes (11/12) as well as a method for producing corresponding X-ray devices (11/12), in which an anode (31/32) and a cathode (21/22) are disposed opposite each other in a vacuumized internal chamber (41/42), electrons  $e^-$  being accelerated to the anode (31/32) by means of impressible high voltage. The anode (31/32) is made of a layer or coating of a metal having a high atomic number, for conversion of the electrons ( $e^-$ ) into X-ray radiation ( $\gamma$ ) with cooling. The cathode (21/22) comprises a substrate substantially transparent for X-ray radiation ( $\gamma$ ) and an electron emitter layer likewise substantially transparent for X-ray radiation ( $\gamma$ ). In particular, the cathode (31/32) can close off the vacuumized internal chamber (41/42) toward the outside.

### List of Reference Numerals

	10,...,12	X-ray tubes
5	20,...,22	cathode (electron emitter)
	30,...,32	anode
	301	emission window
	40,...,42	vacuumized internal chamber
	50/52	metal housing
10	62	insulator
	72	emitter
	$e^-$	electron beams
	$\gamma$	gamma rays (X rays)